



**ENGINEERING CHECKS**

**ARS 50 CLASS**

## AUXILIARIES (AX) PRE-UNDERWAY PHASE

5811	ANCHOR WINDLASS (Inport Drop Test)	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect Tech Manual Support		
Inspect PMS Support		
Inspect posted operating/safety instructions and lubrication data		
Inspect fluid samples		
Inspect for proper HPU fluid levels		
Inspect for proper lubrication of mechanical components		
Inspect Gauge Calibration		
Inspect relief valve data is properly posted		
Inspect all flex hoses are properly tested and labeled		
Inspect mechanical brake operator linkages		
Inspect stroke control linkages		
Inspect flange shields		
Inspect for adequate nitrogen charge for windlass		
Inspect speed limiter		
Inspect for adequate LP air pressure for chain compressor		
Inspect capstan/wildcat brake assembly – mechanical brake components (worm gear end cap as required).		
Inspect electric brake		
Inspect filter differential indications		
Inspect HPU mechanical seal leakage		
Test Compensating Relief Valve is properly set		
Test - Conduct Inport Anchor Drop test		
- Inspect Servo/Replenishment Pressures during wildcat operation		
- Inspect Chain Compressor operation		
- Inspect Anchor drops from the hawsepipe		
- Test electric brake operation		

- Inspect reduction gear lubrication (gauges/sight flows/dipsticks)		
Test crossover valve operation		
Test wildcat/windlass solenoid switch		
Test Main Relief Valve lifts correctly		

5600 / 5611	STEERING (Inport System Verification)	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect Tech Manual and EOSS Support		
Inspect PMS Support		
Inspect operating/safety instructions and hydraulic system/electrical wiring diagrams are posted		
Inspect proper fluid levels		
Inspect hydraulic oil fill connections are properly labeled		
Inspect fluid samples		
Inspect Gauge Calibration		
Inspect rudder stock grounding straps		
Inspect filter indicators		
Inspect Servo/Replenishment Pressures are correct		
Inspect all flex hoses are properly tested/labeled		
Inspect flange shields are properly installed		
Test N2 accumulators are properly charged		
Test the trick wheel stops		
Inspect the crush block clearances		
Test the rudder follow up error (1 deg increments at 0 to 5 deg; 5 deg increments at 5 to 25 deg)		
Test ABT operation		
Test compensator relief valve settings		
Test main relief valve settings		
Test (inport) rudder swing checks		
Test (inport) blocking valve		
Test auxiliary emergency steering pump		
Test manual emergency steering system		
Inspect ram for scoring		
Test steering casualty alarm		
Test pump remote operation and transfer of controls to pilot house		
Test for static rudder split (pilot house in control)		
Test for indicator error (pilot house in control)		

<b>A-002/105-11</b>	<b>EMERGENCY/SHIP'S SERVICE DIESEL GENERATORS</b>	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect Engine Sump Level		
Inspect Turbocharger Sump Level		
Inspect Start Air Lubricator Oil Level		
Inspect Governor Oil Level		
Inspect Lube Oil Sample		
Inspect J/W Expansion Tank Level		
Inspect "Do not open access..." and Expansion Tank warning "Poison..." are posted		
Inspect/test fuel valve trip		
Inspect Relief Valves		
Inspect Flange Shielding		
Inspect For Exhaust Leaks		
Inspect Filters, Strainers		
Inspect Governor and Fuel Linkage for Binding		
Inspect J/W Standby Pump		
Test Blow In Damper		
Test pre-lube system operation		
Test Jacket Water High Temp Alarm		
Test Lube Oil Filter High DP Alarm		
Test low lube oil pressure alarm		
Test Remote Shut Down		
Test Local Shut Down		
Test Barring Device Interlock		
Test Engine Blow Down		
Test Local Pneumatic start		
Test dead bus auto start		
Test Overspeed Trip		
Test 80% load for 15 minutes		
Inspect for fuel/lube oil leaks		
Inspect pyrometer operation		
Inspect manometer		
Inspect sea water cooling pump		
Test high water/generator bearing temp alarm		

<b>5512 / 5513 / 5515</b>	<b>LOW and MEDIUM PRESSURE AIR SYSTEM</b>	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect Tech Manual and EOSS Support		
Inspect PMS Support		
Inspect Gauge Calibration		
Inspect operating/safety instructions are posted		
Inspect compressor oil level and oil samples		
Test compressor pressures and temperatures		
Test compressor capacity control system		
Inspect compressor belt condition		
Test compressor auto control and safety switches		
a. Operational control switches (115/120/125)		
b. Low oil pressure		
c. High discharge pressure		
d. High air and water temp		
Inspect all relief valve testing is within periodicity		
Inspect location of intake/vent supply		
Inspect receiver flask certification		
Test priority valve operation		
Inspect sea water cooling system		
Inspect 50/50 mixture of ethylene glycol		
Test type I and type II dehydrator operation		
a. Gauge calibration		
b. Tower operation		
c. Purge air pressure		
d. Automatic drain operation		
e. Dew point		
f. Inspect PMS and Tech Manual support		

5511 / 5515	HIGH PRESSURE AIR SYSTEM	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect Tech Manual and EOSS Support		
Inspect PMS Support		
Inspect Gauge Calibration		
Inspect operating/safety instructions are posted		
Inspect compressor oil level and oil samples		
Test compressor auto control and safety switches		
a. Start / Stop switch		
b. Low oil pressure switch		
c. Jacket water temp switch		
d. Compressor temp/pressure monitor operation		
Inspect compressor pressures and temperatures		
Inspect compressor drive belt condition		
Inspect condensate monitoring/drain system		
Inspect all flex hoses are properly tested/labeled		
Inspect all relief valve testing is within periodicity		
Inspect HP air flask certification		
Inspect sea water cooling system		
Inspect air intake/ventilation supply location		
Inspect all HP/LP air reducing stations		
Inspect fresh water pump belts		
Inspect capacity		
Inspect oil wipers		
Inspect pressure regulator valve		
Inspect seals for oil leaks		
Inspect 50/50 mixture of ethylene glycol		

5210	FIRE PUMPS (ELECTRIC and STEAM)	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect Tech Manual and EOSS Support		
Inspect PMS Support		
Inspect Gauge Calibration		
Inspect Transducer Calibration		
Inspect Coupling Guard		
Inspect relief valves are within periodicity		
Test remote start/stop functions		
Test local start/stop functions		
Inspect pump operation/design discharge pressure, unusual noise, bearing temps, etc.		
Test the over speed trip (STEAM)		
Test the speed limiting governor (STEAM)		
Test the turbine auxiliary lube oil pump low-pressure automatic start switch operation (STEAM)		
Inspect lube oil filter indications and oil level (STEAM)		
Test combination exhaust and relief valve (STEAM)		
Inspect the packing and mechanical seal leakage		
Inspect for ferrous fasteners		
Inspect the resilient mounts		
Inspect condition of expansion joints		
Inspect all flex hoses are properly tested/labeled		
Inspect piping lagging		
Inspect grounding straps		
Test remote operated suction/discharge valves		
Inspect the suction strainer		

<b>5240</b>	<b>SEAWATER SERVICE PUMPS</b>	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect Tech Manual and EOSS Support		
Inspect PMS Support		
Inspect Gauge Calibration		
Inspect Transducer Calibration		
Inspect Coupling Guard		
Test remote start/stop functions		
Test local start/stop functions		
Inspect pump operation/design discharge pressure, unusual noise, bearing temps, etc.		
Inspect packing and mechanical seal leakage		
Inspect for ferrous fasteners		
Inspect foundation and resilient mounts		
Inspect condition of expansion joints		
Inspect all flex hoses are properly tested/labeled		
Inspect piping lagging		
Inspect grounding straps		
Test remote operated suction/discharge valves		
Inspect the suction strainer		
Test the firemain to seawater reducing station operation, condition and relief valve test periodicity		

<b>5140</b>	<b>AIR CONDITIONING PLANTS</b>	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect EPA certifications		
Inspect Tech Manual and EOSS Support		
Inspect PMS Support		
Inspect Gauge Calibration		
Inspect operating/safety instructions are posted		
Inspect compressor oil level and oil samples		

Inspect warning at entrance (Freon usage) posted		
Inspect Refrigerant logs		
<b>Test halocarbon monitor operation</b>		
Test capacity control system operation		
Test calibration of safety shutdowns/alarms		
a. HP/LP pressure switches		
b. C/W, S/W flow/press/temp switches		
c. Low refrigerant temp switch		
d. Low oil pressure switch		
Inspect moisture indicators		
Test compressor operation (parameters, suct/disch valves)		
Test for leaks (oil/freon/water)		
Inspect chilled water pump		
a. suction valve		
b. discharge valve		
c. mechanical seal		
Inspect chilled water expansion tank		
a. Proper operating level		
b. Filling pipe air gap		
c. Relief valves and vacuum breakers		
d. Hose disconnects and warning sign		
Test PPU		
Inspect recovery unit (Inventory Item)		
Inspect for available vacuum pump		
Inspect sea water system		
a. Pump operation		
b. Zincs and nylon tube inserts present		
c. Condenser header condition		
d. Seawater Regulating valve		
Inspect motor controller		
Inspect coupling guard		
Inspect resilient mounts		
Inspect flex hoses		

## AUXILIARIES (AX) UNDERWAY DEMO PHASE

5811	ANCHOR WINDLASS DROP AND RETRIEVAL DEMONSTRATION		
Component/Sub-Component	Proposed Procedure	Accepted Procedure	
Test - Conduct Anchor Drop and Retrieval test			
- Inspect Servo/Replenishment and Main Relief Pressures during wildcat operation			
- Inspect Anchor drops from the hawsepipe			

5600 / 5611	STEERING DEMONSTRATION		
Component/Sub-Component	Proposed Procedure	Accepted Procedure	
Inspect proper fluid levels			
Inspect correct Servo/Replenishment pressures			
Test - Demonstrate timed rudder swing checks/blocking valve test Ahead (as per provided procedure)			
Test - Demonstrate timed rudder swing checks/blocking valve test Astern (as per provided procedure)			
Inspect for dynamic rudder split from helm indicator			

5331	WATER HEATERS		
Component/Sub-Component	Proposed Procedure	Accepted Procedure	
Inspect Tech Manual and EOSS Support			
Inspect PMS Support			
Inspect list of heaters onboard and spaces hot water services (berthing/laundry/galley)			
Inspect gauge calibration			
Inspect outlet temp at heater (verify operation)			
Inspect relief valve test data			
Inspect relief valve drain piping			
Inspect cold water inlet pipe for check valve			
Test high temp switch setting			

Test high temp switch warning light		
Inspect lagging condition		
Inspect for steam / water leaks		
Inspect Temp Reg Valve for locking device		
Inspect heater foundation		
Test water temp at basin/spigot		

5311	WATER PRODUCTION DEMONSTRATION – FLASH TYPE EVAPS		
Component/Sub-Component	Proposed Procedure	Accepted Procedure	
Inspect PMS and Tech Manual support			
Inspect gauge calibration			
Test flow meter			
Inspect evaporator shell (sight glasses, diffuser cap and scale buildup)			
Test salinity dump valves			
Test interlock device between potable water and feed water valves			
Inspect feed pump (labeled, packing gland, foundation, seal / gland cavity)			
Inspect brine pump (labeled, packing gland, foundation, seal / gland cavity)			
Inspect distillate pump (labeled, packing gland, foundation, seal / gland cavity)			
Inspect brine pump (labeled, packing gland, foundation, seal / gland cavity)			
Inspect heater drain pump (labeled, packing gland, foundation, seal / gland cavity)			
Inspect flexible hose condition and test tag			
Inspect feedwater strainer (foundation and basket)			
Inspect pipe labeling and lagging condition			
Test – Demonstrate 80% water production capability during the 4 Hour Water Production Demonstration			

8543	DUMBWAITER	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect Tech Manual and EOSS Support		
Inspect PMS Support		
Inspect posted operating/safety instructions at each station		
Inspect posted lubrication chart at top station		
Inspect trunk bi-parting doors		
Inspect machinery access cover bolts & nuts		
Inspect machinery oil level		
Inspect hoist machinery mounting hardware		
Inspect hoist drum		
Inspect hoist wire rope and end fittings		
Test slack rope device and limit switch		
Test the hoist brake		
Test the up over travel limit switch		
Test the up deck level limit switch		
Test trunk bi-parting door limit switch		
Inspect car broken rope device		
Inspect car bi-parting door assembly		
Inspect car for missing components		
Test lower level trunk bi-parting doors and limit switch		
Test down over travel limit switch		
Test down level limit switch		
Inspect trunk buffer springs		
Test E-call and sound powered phone system when installed		
Inspect clean out cover mounting hardware		
Inspect motor controller for loose leads, posted placards, grounds and correct fuses		
Inspect dumbwaiter trunk for preservation and cleanliness		
Inspect guide rails		
Test each control station E-stop button		

8543	PACKAGE CONVEYOR	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect Tech Manual and EOSS Support		
Inspect PMS Support		
Inspect posted operating/safety instructions (two man rule/ do not ride) at each station		
Inspect posted lubrication chart at top station		
Test for audible warning when starting conveyor		
Inspect that all station doors are locked		
Inspect that all station controllers are locked		
Test door interlock system		
Inspect load/unloader at each station		
Test door cannot close when loader/unloader is in horizontal or 30 deg inclined position		
Test loader/unloader down interlock switch at each station below upper most level		
Test jam limit switch at each station		
Inspect safety shields are properly installed		
Test up-over travel switch/device operation		
Test clean out door interlock switch if applicable		
Test down overtravel device and switch		
Test indexing feature		
Test E-stop and run/stop buttons at all stations		
Inspect proper florescent lighting at each station		
Inspect trunk shielding and mounting hardware		
Inspect trunk guide rails		
Inspect conveyor trunk for preservation/cleanliness		
Inspect all carrier trays are installed and tight		
Test all station growlers and phone circuits are functional and headsets are present		
Inspect conveyor has been load tested within the last five years to include weight test data		
Inspect speed reducer is filled to proper level with oil		
Inspect drive, driven and carrier chains are properly tensioned		
Test bite panel for correct components and proper operation		
Inspect motor controller for loose leads, posted placards, grounds and correct fuses		
Inspect drive machinery for missing/loose components		

5161	REFRIGERATION PLANTS	
Components/Sub-Components	Proposed Procedure	Accepted Procedure
Inspect EPA certifications		
Inspect Tech Manual and EOSS Support		
Inspect PMS Support		
Inspect Gauge Calibration		
Inspect operating/safety instructions are posted		
Inspect compressor oil level and oil samples		
Inspect warning at entrance (Freon usage) posted		
Inspect Refrigerant logs		
<b>Test halocarbon monitor operation</b>		
Test capacity control system operation (vent plug)		
Test calibration of alarm / shutdowns		
a. HP / LP pressure switches		
b. Sea water flow / pressure switch		
Test compressor operation (parameters, suction/discharge valves)		
Inspect for piping suppressors		
Inspect for leaks (oil/freon/sea water)		
Inspect refrigerant recovery system/vacuum pumps		
Inspect sea water system (pump operation, zincs, nylon tube inserts, and condenser header)		
Test chill/freezer boxes for fan operation, lighting, coil condition and curtains		
Inspect ventilation (flow/location/indicators and alarms		

6641	FAN ROOMS	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect deck condition		
- No standing water		
- Deck rusted / exfoliated		
- Deck drain not installed		
- Deck drain missing, not secured within deck socket or inoperative		
Inspect deck/bulkheads have no painted over rust		
Inspect lighting is operative and covers installed		
Inspect adequate lighting present in space		
Inspect vent duct condition		
- Access covers present		
- Access cover fasteners not rusted/missing		
- Duct interior is clean		
Inspect correct vent/piping system labeling		
Inspect fan motor installed correctly (flow)		
Inspect filters are clean and can be easily removed		
Inspect filter DP gauge is operative		
Inspect vent heating element is operative and not deteriorated		
Inspect cooling coils are clean		
Inspect thermostatic controls are calibrated, connected and operational		
Inspect the cooling coil drain is piped to the deck drain and is not clogged		
Inspect the proper color coding of piping		
Inspect that all hand wheels are present		
Inspect for damaged / missing lagging		
Test the C/W or steam solenoids are operational		
Inspect for chilled water / steam leaks		
Inspect for bull's eye and CCOL in space		
Inspect for any unauthorized stowed material		
Inspect for any unauthorized flammables		
Inspect the filter cleaning shop		



5331	POTABLE WATER PUMPS	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect Tech Manual and EOSS Support		
Inspect PMS Support		
Inspect Gauge Calibration		
Inspect Transducer Calibration		
Inspect Coupling Guard		
Test local start/stop functions		
Inspect pump operation/design discharge pressure, unusual noise, bearing temps, etc.		
Inspect packing and mechanical seal leakage		
Inspect for ferrous fasteners		
Inspect foundation and resilient mounts		
Inspect all flex hoses are properly tested/labeled		
Inspect grounding straps		

5681	BOW THRUSTER	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect Tech Manual Support		
Inspect PMS Support		
Inspect posted operating/safety instructions and lubrication data		
Inspect fluid samples		
Inspect for proper HPU fluid levels		
Inspect lube oil filters		
Inspect cable sheave and dust boot lubrication		
Test hydraulic relief valve		
Inspect right angle drive assembly		
Test bow thruster operation		

<b>ELECTRICAL (EL)</b> <b>PRE-UNDERWAY PHASE</b> <b>ARS 50</b>		
<b>3202 / 3112</b>	<b>SHIPS SERVICE DIESEL GENERATORS</b>	
<b>COMPONENT/SYSTEM</b>		<b>PROPOSED PROCEDURE</b>
Test dead bus pick-up.		A-9
Test reverse power relays.		A-11R
Test parallel operation.		IAW EOP
Test manual load shedding.		N/A
<b>400 HERTZ DISTRIBUTION SYSTEM (MOTOR GENERATORS)</b>		
<b>COMPONENT/SYSTEM</b>		<b>PROPOSED PROCEDURE</b>
Test split and parallel operation.		IAW EOP / CSOSS
<b>4221</b>	<b>TELL-TALE PANEL/NAVIGATION SIGNAL LIGHT PANEL</b>	
<b>COMPONENT/SYSTEM</b>		<b>PROPOSED PROCEDURE</b>
Test Navigational Lighting Panel.		R-2
Measure insulation resistance of Navigational Lighting Panel.		S-1
Measure insulation resistance of Signal Light Panel.		S-1
<b>4331</b>	<b>ANNOUNCING SYSTEMS</b>	
<b>COMPONENT/SYSTEM</b>		<b>PROPOSED PROCEDURE</b>
Test general, chemical, and collision alarms from all stations.		Q-1R/R-1
Test 1MC from all stations		Q-1R/R-1
Measure speaker group insulation resistance.		A-1
<b>4331</b>	<b>ANNOUNCING SYSTEMS (CON'T)</b>	

<b>COMPONENT/SYSTEM</b>		<b>PROPOSED PROCEDURE</b>
Test MC operation		Q-2R
Test 21MC operation		Conduct operational test
<b>4751</b>	<b>DEGAUSSING SYSTEM</b>	
<b>COMPONENT/SYSTEM</b>		<b>PROPOSED PROCEDURE</b>
Conduct linearity test		Q-1
Conduct ground test.		M-2
Inspect degaussing folder.		NAVSEA TECH MANUAL
<b>3202</b>	<b>AUTOMATIC BUS TRANSFER EQUIPMENT</b>	
<b>COMPONENT/SYSTEM</b>		<b>PROPOSED PROCEDURE</b>
Test Engineering ABT's.		Q-1R
Test all remaining ABT's. (Day 2)		S-1R
<b>4371</b>	<b>REVERSE OSMOSIS UNIT</b>	
<b>COMPONENT/SYSTEM</b>		<b>PROPOSED PROCEDURE</b>
Test dump valve operation		S-2
Test alarm settings		S-2
<b>4373</b>	<b>WIND INDICATING SYSTEM</b>	
<b>COMPONENT/SYSTEM</b>		<b>PROPOSED PROCEDURE</b>
Test System For Proper Operation		R-1M

5081	THERMAL IMAGING SURVEY	
(COMPONENT/SYSTEM)	PROPOSED PROCEDURE	
Commence Thermal Imaging Throughout The Ship <b>NOTE:</b> Any equipment surveyed that has a temperature rise of 40 degrees centigrade or above (3 or 4 star) must be repaired or tagged out prior to getting underway. The items will not be available until repairs are completed and re-shot for verification	R-1 / R-2	

## ELECTRICAL (EL) UNDERWAY PHASE

**NOTE:** Electrical Underway Checks Consist Mainly Of Space Walk-Through Throughout The Ship.

In each space inspect the following if applicable:

### (INSPECT) FUSE BOXES

COMPONENT/SYSTEM	PROPOSED PROCEDURE
Are fuses pulled from designated circuits without danger tags affixed?	NSTM 300 - 2.4.1
Are there loose or missing locking nuts or gear adrift?	NSTM 300 – 4.8.1
Are circuits properly labeled for easy identification?	GSO 305E
Are there any bent, twisted, misaligned, or broken fuse clips?	NSTM 300 4.8.1
Is the interior rusty or dirty?	NSTM 300 – 4.8.1/5.2.4
Are fuses of the correct amperage and voltage installed?	GSO 303F NSTM 320 – 1.7.4
Are circuits fed from one set of fuses (except battle lantern circuits) multiple?	GSO 331C
Are fuse clips phosphor-bronze instead of silver plated?	NSTM 300 – 4.8.1.2
Were door hinges broken?	5100.19 SERIES NSTM 300
Are non-silver ferruled fuses installed?	NSTM 300 - 2.5.4
Are circuits over fused?	NSTM 300 – 2.5.4
Is clearance provided to permit complete accessibility for maintenance, repair, renewal of fuses, and testing?	GSO 300D

### (INSPECT) BATTLE LANTERNS

COMPONENT/SYSTEM	PROPOSED PROCEDURE
Were relay-operated lanterns installed in sufficient number?	NSTM 330 – 1.6.4.3.3.1
Are lanterns installed with suitable bracket assemblies to prevent removal of lantern?	NAVSEA 0964-000-2000 NSTM 300
Were lanterns inoperative?	NSTM 330 – 3.6.2
Were test switches and relay frames grounded?	NSTM 330 – 2.1.8

### (INSPECT) BATTLE LANTERNS (CON'T)

COMPONENT/SYSTEM	PROPOSED PROCEDURE
Were lanterns located in explosion proof enclosures (prohibit)?	NSTM 330 – 1.6.4.3.2.2
Were NEALS lanterns installed and were they charged (red indicator)?	NSTM 330 – 1.6.4.3.2
Were relay operated lanterns fused?	NSTM 330 – 1.6.4.3.3.3
(INSPECT / TEST) SHORE POWER SYSTEM	
COMPONENT/SYSTEM	PROPOSED PROCEDURE
Is shore power being properly rigged?	NSTM 320-2.2.7
Did shore power shunt trip interlocks trip its associated breakers when tested?	IAW PMS IAW EOSS GSO 320D
Was shore power system cabling between the receptacles and the ship's switchboard insulation resistance within EOSS or PMS Limits	SPRU NSTM 300/320
Were shore power indicating lights operative, white in color, and all screws installed?	NSTM 320 – 2.2.9
Were warning signs posted?	GSO 070H
Was there pigtail stowage installed?	GSO 320D
Does the shore power system meet the current standards:	GSO 320D
<ul style="list-style-type: none"> <li>- Have a Viking Connector System</li> <li>- Have AQB-LF400 Amp Circuit Breaker with shunt trip</li> <li>- Have a phase sequencing and phase orientation devices.</li> <li>- Have installed ammeter and selector switch to monitor total shore power current.</li> </ul>	

(INSPECT) CATHODIC PROTECTION SYSTEM	
COMPONENT/SYSTEM	PROPOSED PROCEDURE
Was the installed Cathodic Protection System operative and adjusted	GSO 633C
Were the rudder grounding straps made of 1-1/2 inch wide braided copper and brazed to the rudder stock and the hull?	NSTM 633 – 3.3.2.7 GSO 633C
Has the system been turned off greater than 15 days?	GSO 633G
Was brush rigging correctly installed?	NSTM 633- 3.3.2.6
Were shaft grounding brushes correctly installed?	NSTM 633 ICCP Tech Manual
Did shaft grounding brushes exhibit full contact with the slip ring?	NSTM 633 – 3.3.2.6 ICCP TECH MANUAL
(INSPECT / TEST) ALARM SYSTEMS	
COMPONENT/SYSTEM	PROPOSED PROCEDURE
Test alarm switchboards and panels.	4351/Q-2
Were any alarm and warning systems inoperative or missing parts?	GSO 433J
(INSPECT) ORDER/INDICATING/METERING SYSTEMS	
COMPONENT/SYSTEM	PROPOSED PROCEDURE
Were Tank Level Indicators (TLI's) out of calibration or inoperative?	GSO 437 E
Were valve position indicator circuits misadjusted or inoperative?	GSO 430H
Were there missing or inoperative salinity cells?	GSO 531B IAW PMS
MOTOR CONTROLLERS	
COMPONENT/SYSTEM	PROPOSED PROCEDURE
Were interiors dirty, rusty, deteriorated, or contained gear adrift?	NSTM 302-3.3.2 GSO 320F
Were wiring diagrams, schematics or overload heater tables missing?	NSTM 302-3.3.1

MOTOR CONTROLLERS (CON'T)	
COMPONENT/SYSTEM	PROPOSED PROCEDURE
Was controller electrical wiring properly banded?	ELECT PLT. INST. STD METHODS/GSO 302F
Were Start, Stop, "Emergency Run" or Reset buttons seized, missing or inoperative?	3001/S-1/18M-1
Were rubber boots cracked, torn or missing?	NSTM 300-3.2.2 3001/S-1/18M-1
Were overload relay heaters properly sized and adjusted to provide adequate protection for the motor?	NSTM 302-3.3.2 GSO 302G
Were switches protected against inadvertent activation?	GSO 070H
Were controllers with multiple power sources properly labeled?	GSO 305C
Were motor foundations properly preserved?	GSO 631J
Were controllers and remote operating stations properly labeled?	GSO 305C
Is clearance provided to permit complete accessibility for operation, maintenance, repair, renewal of fuses, and testing?	GSO 300D
WORKBENCHES	
COMPONENT/SYSTEM	PROPOSED PROCEDURE
- Does the workbench conform to standards set forth in NSTM 300 APP H? (Insulation, ground straps, disconnect switches, labeling, ground connections, etc)	NSTM 300 GSO 320E GSO 665 GSO 650
(INSPECT) ELECTRICAL SAFETY	
COMPONENT/SYSTEM	PROPOSED PROCEDURE
Were flat irons a high-grade commercial type with a three pronged cord?	NSTM 300-2.7.3.6 GSO 640G

Were Ironing Board Stations in berthing space modified to remove spotlight and fill the access hole? Ensure irons are not hardwired.	GSO 640G
<b>(INSPECT) ELECTRICAL SAFETY (CON'T)</b>	
<b>COMPONENT/SYSTEM</b>	<b>PROPOSED PROCEDURE</b>
Have shorting probes been modified by installing a nylon screw in the end of the probe and soldering the clip to the conductor?	NAVELEX 0101, 110A FIG 1-3 IAW PMS
Are portable tools/devices not stamped "Double Insulated" or equipped with a three pronged cord?	NSTM 300-2.7.3.3 IAW PMS
Were Hospital grade plugs used on portable equipment?	NSTM 300-2.7.3.2.8
Were light fixtures, guards, and covers securely mounted?	NSTM 300-4.3.3
Were over-sized lamps installed in lighting fixtures?	NSTM 330-2.2.4 NSTM 330-2.2.9
Were light fixtures missing lenses, protective guards, or faceplates?	NSTM 330-2.1.4 NSTM 330-2.2.6
Did diesel module room have adequate lighting?	GSO 331B GSO 332E
Were spray-tight fixtures adequately protected against water intrusion?	NAVSEA 0964-000-2000
Was bunk lighting cable hanging, or not routed through the inside of bunk stanchions?	NAVSEA 0964-000-2000
<b>(INSPECT) CABLING</b>	
<b>COMPONENT/SYSTEM</b>	<b>PROPOSED PROCEDURE</b>
Was PVC cabling installed (new construction only)?	GSO 304D
Were dead-ended cables properly identified/terminated?	NSTM 300-4.6.7 GSO 304E NSTM 300-4.6.9 DOD-STD-2003-1
<b>Were useless or improperly installed cables removed?</b>	NSTM 300-4.6.7.1 GSO 304E
Was cabling properly supported, routed or were nylon	GSO 304E

wire ties being utilized?	
<b>(INSPECT) CABLING (CON'T)</b>	
<b>COMPONENT/SYSTEM</b>	<b>PROPOSED PROCEDURE</b>
Were cables pulling out of equipment?	GSO 331E
Were cables improperly spliced?	GSO 304E NSTM 300-4.6.8 DOD-STD-2003-1
Were cables protected against being handholds or being stepped on?	GSO 304E
Was cabling run through beams without the use of chaffing rings?	NSTM 300 TABLE 300-4-4 GSO 304E
Was cabling running through metal partitions equipped with grommets?	GSO 304E NSTM 320-1.6.11
Were cable stuffing tubes properly assembled ?	NSTM 300-4.6.10.1 NSTM 300 TABLE 300-4-4 NSTM 320-1.6.11 GSO 304E
Were multiple cables running through one stuffing tube?	GSO 304E NSTM 300 TAB. 300-4-4
Were multi-cable penetrators installed in Flammable Liquid Storerooms?	GSO 304E MIL-STD-1310
<b>(INSPECT) BUS TRANSFER EQUIPMENT</b>	
<b>COMPONENT/SYSTEM</b>	<b>PROPOSED PROCEDURE</b>
Were ABT's installed for the following: <ul style="list-style-type: none"> <li>- Emergency Lighting.</li> <li>- IC Switchboard and panels.</li> <li>- Steering power panel.</li> <li>- Pumps associated with the main and auxiliary machinery plant having Low Voltage Release (LVR) control.</li> <li>- Fire pumps.</li> <li>- Fire extinguishing auxiliaries and controls.</li> </ul>	NSTM 320-1.3.2 GSO 320D
Did ASCO ABT transfer switches have an electrical charge on the metal screw on the manual operator?	NAVSEA FSC SER 03E2/03E2-234
Was the sliding interlock on manual bus transfer switches effective at preventing both breakers from	NSTM 300-4.8.4.2

being closed at the same time?	
Are feeder circuit breaker megger holes blanked off?	NAVSEA 230319ZNOV 98
Were Normal/Alternate source indicating lights operative?	NSTM 320-2.2.6.4
<b>(INSPECT) SHIP TELEPHONE SYSTEM</b>	
<b>COMPONENT/SYSTEM</b>	<b>PROPOSED PROCEDURE</b>
Was the system unreliable due to unresolved software or hardware deficiencies?	NSTM 430-3 GSO 432
Test battery back-up for telephone system	NSTM 313-2.5 GSO 313J
<b>(INSPECT) MOTORS</b>	
<b>COMPONENT/SYSTEM</b>	<b>PROPOSED PROCEDURE</b>
Were motor foundations properly preserved?	NSTM 300- 5.4.3.10 GSO 631J
Was resilient mounted electrical equipment grounded to the ship's hull through ground straps?	NSTM 300- 2.2.1
Did electrical rotating machinery have ball check grease fittings (zerk fittings) installed?	NSTM 244
Were coupling, belt, or chain guards effective?	GSO 320E
<b>POWER PANELS</b>	
<b>COMPONENT/SYSTEM</b>	<b>PROPOSED PROCEDURE</b>
Do labels specify the proper information?	GSO 305E
Do Breaker ratings match the circuit label current rating?	GSO 305E
Are multi-phase circuits missing breaker connecting handles?	GSO 324C
Were power panels located inside galley spaces?	GSO 320E
Is clearance provided to permit complete accessibility?	GSO 300D
<b>CASUALTY POWER CABLES</b>	
<b>COMPONENT/SYSTEM</b>	<b>PROPOSED PROCEDURE</b>
Were cable ends properly terminated?	GSO 304E NSTM 320-3.4.1 DOD-STD-2003
Were cables deteriorated from age, heat, and	NSTM 079-47.4.2.2.10

humidity?	
Were normally energized power terminals labeled?	NSTM 320-1-2-8-2 GSO 320G
Were racks properly identified as to number/length of cables assigned to the rack?	GSO 305F
<b>CASUALTY POWER CABLES (CON'T)</b>	
<b>COMPONENT/SYSTEM</b>	<b>PROPOSED PROCEDURE</b>
Is there a label attached at the end of the cable to indicate the length and stowage rack number?	GSO 305F DOD-STD-2003
Are cable leads properly identified for phase identification?	NSTM 320-1.2.8.2
Were cable ferrules missing or heavily oxidized?	NSTM 079-47.4.2.2.6
Was an improper number/length of cable installed on a cable rack?	NSTM 079-47.5.6.1 GSO 320G
Were wrenches missing from terminals?	NSTM 079-47.4.2.3.3
Were covers installed on power terminals?	NSTM 079-47.4.2.3.4 NSTM 079-47.4.2.3.6 GSO 320G
<b>ELECTRICAL DISTRIBUTION EQUIPMENT</b>	
<b>COMPONENT/SYSTEM</b>	<b>PROPOSED PROCEDURE</b>
Was electrical distribution equipment securely mounted?	NSTM 300-4.3.3 GSO 300D
Electrical distribution equipment have loose or missing covers?	NSTM 300-4.3.3
Were control knobs or fasteners missing from electrical equipment?	NSTM 300-4.3.3
Was electrical equipment protected from water intrusion?	NSTM 300-4.4.1 NSTM 300-4.4.5
Is electrical properly mounted or was it suspended solely by electrical cables?	NSTM 300-4.3.3
Were 440 multipurpose outlets properly phased?	NSTM 320-1.4.1
Did Standard Navy Receptacles (SNR) and Multi-Purpose Outlets (MPO) have an interlock switch or was the switch function such that the plug	NSTM 320-1.4.1

could not be removed from an energized receptacle?	
Were electrical receptacles broken or damaged?	NSTM 300-2.7.6
Were 400HZ AC, 60HZ AC, and DC convenience outlets labeled to prevent equipment being used with the wrong frequency?	GSO 320
<b>SOUND POWERED TELEPHONE SYSTEMS</b>	
<b>COMPONENT/SYSTEM</b>	<b>PROPOSED PROCEDURE</b>
Were any Sound Powered Circuits below 50,000 ohms resistance to ground?	GSO 432I
Were Sound Powered Call Signal Stations (growlers) inoperative, corroded, damaged or missing parts?	NSTM 430
Were Sound Powered Jackboxes improperly labeled, corroded, damaged, or missing parts?	NSTM 430-3.2
<b>(INSPECT) LIGHTING</b>	
<b>COMPONENT/SYSTEM</b>	<b>PROPOSED PROCEDURE</b>
Were darken ship switches operative and adjusted properly? Ship provide list of darken ship switches for survey.	DOD-HDBK-289 NSTM 330-3.6.5
Were light fixtures, guards, and covers securely mounted?	NSTM 300-4
Were over-sized lamps installed in lighting fixtures?	NSTM 330-2
Were light fixtures missing lenses, protective guards, or faceplates?	NSTM 330-2
Were spray-tight fixtures adequately protected against water intrusion?	NSTM 300-4
Did diesel module room have adequate lighting?	GSO 331B/332E
<b>(INSPECT) BATTERY LOCKERS</b>	
<b>COMPONENT/SYSTEM</b>	<b>PROPOSED PROCEDURE</b>
Was a Battery Log maintained?	NSTM 313-2 GSO 313F
Is there an electrical interlock between exhaust ventilation and battery charger?	5100.19C C0904 NSTM 313
Test ventilation interlocks	3131/S-2
Are Alkaline and Lead Acid Batteries being serviced in the same facility?	5100.19 C0904 GSOF

Is each locker provided with: - Rubber Gloves and Aprons. - Goggles. - Two battery fillers. - Two battery test sets. - One soda water container.	5100.19 GSO 313F NSTM 313
Does the locker contain an eye wash station and a deluge shower?	NSTM 313-2

<b>(INSPECT) BATTERY LOCKERS (CON'T)</b>	
<b>COMPONENT/SYSTEM</b>	<b>PROPOSED PROCEDURE</b>
Are battery storage racks greater than 12 inches between tiers?	GSO 313F
Were battery hold-down clamps provided?	GSO 313F
Are Acids stored in appropriate protective containers?	GSO 313F
Are battery charger plugs and jacks marked NEG. and POS.?	GSO 313F
<b>(INSPECT) MISCELLANEOUS EQUIPMENT</b>	
<b>COMPONENT/SYSTEM</b>	<b>PROPOSED PROCEDURE</b>
Is permanently mounted electrical equipment hardwired to the ships electrical system?	NSTM 330-1
Is hardwired electrical equipment permanently mounted?	NSTM 330-1
Was more than 1 multi-purpose power strip connected to one isolated receptacle circuit?	NSTM 300-2.7
Is electrical equipment mounted on non-conducted surfaces properly grounded?	3000 / A-5
<b>Were Surge Protectors of the approved type?</b>	3000 / A-4R
Are portable electric device power cords properly tinned?	3000 / Q-1R
Are permanent-type safety precautions, operating instructions, high voltage warning signs, and resuscitation instructions installed where required?	NSTM -H.5, I-2
Did electrical connection boxes have knockouts pushed in leaving access holes In the side?	NSTM 300-2.



Are non-watertight connection boxes being used in engineering spaces?	GSO 300D
Was rubber matting oil soaked, cracked, punctured, perforated or had imbedded metal or conductive particles?	GSO 634B

(INSPECT) MISCELLANEOUS EQUIPMENT (CON'T)	
COMPONENT/SYSTEM	PROPOSED PROCEDURE
Did dress ship lights have broken, missing, or incorrect guards?	NSTM 330-1 3000/ R2
Were dress ship light receptacles labeled "Dress Ship Light Streamers. Not to be used for any other purpose"?	NSTM 330-1-
Were panel switches controlling circuits that are de-energized during darkened ship operation marked DARKENED SHIP?	NSTM 330-1
Had the float charge on the UPS batteries been reduced from 135vdc to 129vdc?	IAW PMS
Was UPS electronic cabinet bottom sealed to prevent water of oil entry from lower level engine room?	GSO 300D/324D NSTM 300-4

ELECTRICAL (EL) POST-UNDERWAY  ARS 50	
	OPEN AND INSPECT AS REQUIRED BY THE INSPECTION
COMPONENT/SYSTEM	PROPOSED PROCEDURE

MAIN PROPULSION PRE-UNDERWAY PHASE ARS 50		
2331	MAIN ENGINE	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect Engine Sump Level	EOP MEDA	
Inspect Calibration and Indicators	CRL	
Test Blow In Damper	2513 s-1 step a	
Inspect Filters, Gaskets, and Frames	2513/002 M-1	
Inspect Governor Lube Oil Level	EOP MEDA	
Inspect Lube Oil Sample	NSTM 262	
Inspect J/W Expansion Tank Level	EOP MEDA	
Inspect Relief Valves	5000/005	
Inspect for Exhaust Leaks	NSTM 233	
Inspect Flange Shields	NSTM 505	
Inspect Zinc Anodes	2331/003 M-1	
Test Prelube Pump	EOP CMDS	
Test Jacket Water High Temp Alarm	2331 A 5 step f	
Test Remote Shutdown	2331 S-2	
Test Local Shutdown	MEDA	
Test Local Pneumatic Start	MEDA	
Test Low Lube Oil Alarm	2331 A-1 step l-n	
Test Low Lube oil Shutdown (High/Low speed)	2331 S-2 step 1d	

Test Overspeed Trip	2331/004 24M-2R	
Inspect Governor and Fuel Linkage for Binding	MEDA	

2411	REDUCTION GEARS	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect Sump Level and Lube Oil Condition	R2000/R-1	
Inspect Gear Teeth, Lube Oil Spray Pattern, Casing Interior	2411/012 A-1	
Inspect Oil Flow in SFI's	NSTM 241	
Inspect Temperature Gauges	JFMM V4	
Inspect Casing Exterior	NSTM 241	
Inspect Vent Fog Precipitator	S9514BRMMA010	
Test Shaft Turning Gear and Locking Device	MRJG	
Test MRG low LO press starting interlock	2331 S-3	

2411	REDUCTION GEARS	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Test LOSP auto start	2411 Q-5 step h	
Test Clutch Low Pressure Alarms	EOP PDD	
Test MRG Low LO alarm	2411 Q-5	
Inspect Security Devices	EDORM	
Inspect Piping Systems	EDORM	
Inspect Flange Shielding	NSTM 505	
Test Brake Low Pressure Alarm	EOP PDD	
	LINE SHAFT BEARINGS	

Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect Seals		
Inspect Lubricator		

<b>2430</b>	<b>STERN TUBE SEALS</b>	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Gauges	CRL	
Cooling Water Piping	NSTM 505	
Cooling Water Strainer/Filter	STCW	
Test Cooling Water Low Flow Alarm	STCW	

<b>2430</b>	<b>STERN TUBE SEALS</b>	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
LP Piping/Hoses/Fittings	NSTM 555	
CO2/N2 Piping/Fitting	NSTM 505	
Test Inflatable Seal	2400 S-1	
Emergency Flax Packing Kit	S9243BGMMA 010SYN4	
Backing Ring	S9243BGMMA 010SYN4	

<b>2451</b>	<b>CRP/CPP</b>	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect HOPM	JFMM V4; NSTM 505; NSTM 556	
Inspect Flex Hoses	2451/004 18M-1	
Inspect Piping	NSTM 505	

Inspect Gages	CRL	
Inspect Flange Shields	NSTM 505	
Inspect Sump Level	EOP PHOS	
Inspect Oil Condition	2451/004 S-1R	
Verify Calibration between Consoles and OD box	CPPGT	
Test Slew Rate, Command Pitch Mismatch Alarm	EOP CPPT step 1-3	
Test Emergency Pitch Pump	EOP MSEAH 1-19	
Test Electric CRP Pump	EOP PHOS	
Inspect Mechanical Seal	NSTM 503	

	<b>LUBE OIL SYSTEMS</b>	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
- Test Purifier operation	EOP PTLO	
- Inspect Heater	EOP PTLO	
- Inspect Purifier	EOP PTLO	
Test /Inspect Lube Oil Strainer Baskets and Enclosures	EOP LOFS	

<b>2610</b>	<b>FUEL OIL SYSTEMS</b>	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
- Test Purifier operation	EOP FOPO	
- Test Pump, Fuel Oil	EOP STFO	
- Inspect Purifier	EOP STFO	
Test Fuel Oil Service Tanks for Water	NSTM 541	
Test Service Tank Suction Valves	5000/005	
Test Service Tank Recirc Valves	5000/005	
Test Quick Closing Valves	5000/005	

Flame Failure	5171 Q 1R Step b	
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2521	CONTROLS	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Test EOT Indicator	EOP EOT step 4	
Test EOCC Alarms and Indicators	EOP CTAI	
Test Eng LOSP Alarms and Indicators	EOP CTAI	
Test Propeller LOSP Alarms and Indicators	EOP CTAI	
Inspect Bell Logger	CA (33)	
Test EOT Wrong Direction Alarm	EOP EOT step 8	
Test Console Self-Checks	EOP CTAI	
Inspect Torsionometer and verify calibration data	2400/006 R-1	

1130	HULL STRUCTURE	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Inspect Bilges/Angle Irons	NSTM 100	
Inspect Deck Plates	MLOC	
Inspect Equipment Foundations and resilient mounts	NSTM 100	
Inspect Paint and Preservation	6300 S-1	
Inspect Pipe Brackets/Hangers	NSTM 505	
Inspect Lighting	NSTM 303	

AUXILIARY BOILER CHECKS		
Low Water Cut off	5171 Q 2R step b	
Test High Steam Pressure Cut off	5171 18 M 1R Step a	
Fuel Oil Quick Trips	5000/05 S-2	

# **MAIN PROPULSION UNDERWAY PHASE ARS 50**

	DEMONSTRATIONS	
Component/Sub-Component	Proposed Procedure	Accepted Procedure
Demonstrate Full Power ahead (1 hour)	PMS/EOSS/POG/9094.1B	
Demonstrate Quick Reversal Astern	POG/Full Power Memo/EOSS	
Demonstrate Quick Reversal Ahead	POG/Full Power Memo/EOSS	
Demonstrate fuel oil purifier (s) operation	EOSS/PMS	
Demonstrate purifier (s) emergency stop capability	EOSS/PMS/Tech manual	